Background The oral epidermal growth factor receptor (EGFR) tyrosine kinase inhibitor (TKI) erlotinib is an established second-line treatment for advanced non-small cell lung cancer (NSCLC). Erlotinib delays disease progression and increases survival after first-line chemotherapy in patients with advanced NSCLC as second-line treatment. Maintenance treatment with erlotinib, when compared to placebo, could be associated with a significantly longer progression-free survival and tolerability mainly in EGFR-activating mutation tumours. However second-line treatment with erlotinib is not more effective than chemotherapy (pemetrexed or other). In terms of traditional toxicities associated with chemotherapy, erlotinib seems to have a better safety profile than chemotherapy, with no haematological toxicities. The most common event has been mild to moderate skin rash which is relatively manageable.

Purpose To study erlotinib’s efficacy profile in Fernando Fonseca hospital NSCLC patients.

Materials and Methods We followed up 30 NSCLC patients, who had taken erlotinib before and after other approved chemotherapies, during the 14 months starting from June 2011. During this period we collected patient demographics and baseline characteristics and also their EGFR mutational status. To determine erlotinib effectiveness we calculated progression-free survival (PFS) which was defined as the time from starting erlotinib treatment to the date of documented disease progression or death.

Results The median age of our 30 patients was 62.5 years. The most common pathological subtype was adenocarcinoma (66.6%). 46.6% of our patients had received one prior chemotherapy regimen before erlotinib and 36.6% had received two prior chemotherapy regimens before erlotinib. Two patients took erlotinib as a first line treatment. Median PFS for second-line erlotinib patients was 18.7 weeks while for third-line erlotinib patients it was 12.3 weeks. Only 50% of our patients had information available regarding EGFR mutational status; however patients who harboured tumour-associated EGFR activating mutations seemed to have higher response rates to erlotinib. Rash was the most common treatment-related adverse event with erlotinib, as expected.

Conclusions Our results show that maybe there could be a better disease outcome for advanced NSCLC patients if the oral epidermal growth factor receptor tyrosine kinase inhibitor (erlotinib) were administered as a second-line treatment instead of using it as a third-line treatment. As far as EGFR mutational status is concerned it seems that enhanced efficacy is related to EGFR mutation-positive disease.

No conflict of interest.